

Commitment Language and Homework Completion in a Behavioral Employment Program for Gang-Affiliated Youth

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Abstract

Research with substance-abusing samples suggests that eliciting commitment language during treatment may improve motivation to change, increase treatment engagement, and promote positive treatment outcomes. However, the relationship between in-session client language and treatment success is not well-understood for youth offender populations. This study evaluated the relationship between commitment language, treatment engagement (i.e., homework completion), and weekly employment outcomes for six gang-affiliated juvenile offenders participating in an employment counseling intervention. Weekly counseling sessions were audio-recorded, transcribed, and coded for commitment language strength. Multilevel models were fit to the data to examine the relationship between commitment language and counseling homework or employment outcomes within participants over time. Commitment language strength predicted subsequent homework completion but not weekly employment. These findings imply that gang-affiliated delinquent youth who express motivation to change during employment counseling will be more likely to comply with counselor-initiated homework. Further research on counselor techniques for promoting commitment language among juvenile gang offenders is needed.

Keywords

engagement, homework assignments, motivation, offenders, psychotherapy process

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Youth gangs pose a significant public health concern because their members are more delinquent than other offenders, arrested and incarcerated more frequently, and at increased risk for violence exposure and death (Gatti, Tremblay, Vitaro, & McDuff, 2005; Peterson, Taylor, & Esbensen, 2004; Thornberry, Marvin, Lizotte, Smith, & Tobin, 2003; Tita & Ridgeway, 2007). Research guiding effective intervention with gang members is lacking, however, often due to insufficient program evaluation (Klein & Maxson, 2006). Potential elements of successful gang intervention include community mobilization, opportunity provision, crisis intervention, suppression, and organizational change and development (Spergel, 2007). Although delivering all these elements comprehensively appears promising (Spergel, 2007), little is known about the relative importance of separate components. Helping young people access employment might be an effective form of opportunity provision. Theory and naturalistic studies suggest one powerful route to gang exodus may be through a gradual reorientation from street life to adult roles, such as by taking on paid work (van Gemert & Fleisher, 2005; Vigil, 1988). Many gang members perceive employment as a legitimate reason for disengaging from the gang (Hagedorn, 1994), which may lead to less hostility from other gang members when an employed gang member becomes less active in gang activities (Pyrooz & Decker, 2010). While not yet rigorously tested with gang-affiliated youth, employment-based interventions may be able to capitalize on this naturally occurring path to desistance.

One such employment-based intervention is the Behavioral Employment Program (BEP), a vocational program developed in the 1970s, which proved highly effective at decreasing recidivism among delinquent youth (Walter & Mills, 1980). Our adapted version of BEP focuses on job skills development and systematic job-seeking, with homework as a crucial element of the job search process. BEP youth are expected to complete relevant activities each week, including reading classified sections of newspapers, cold-calling businesses to ask about job openings, and applying to jobs online and in-person. A recent pilot evaluation showed that BEP participants had difficulty completing homework assignments on a regular basis and only 50% of youth obtained employment (McDaniel, 2010). Low engagement with BEP homework is problematic because job search effort and intensity are both associated with subsequent success in obtaining work (Azrin & Besalel, 1980; Kanfer, Wanberg, & Kantrowitz, 2001).

Uneven homework completion and low job acquisition may have resulted from low motivation to change, which is detrimental to success in counseling, particularly when interventions require clients to take specific actions (Snyder & Anderson, 2009; Velicer & Prochaska, 1999). Because motivation *can* develop over the course of counseling (Day, Tucker, & Howells, 2004), motivational enhancement techniques may prove helpful within gang interventions by increasing the likelihood that clients will engage in treatment activities and achieve their treatment goals (Farbring & Johnson, 2008; Prochaska & Levesque, 2002). Among less motivated clients, eliciting change talk (i.e., statements indicating *desire* to change, *ability* to change, *reasons* for change, *readiness* to change, *need* for change, and *commitment* to change) may help cultivate motivation for engaging in treatment. Some data suggest that commitment language,

client-produced statements that indicate intention to change in a positive direction may be the subcategory of change talk most strongly associated with behavior change (Aharonovich, Amrhein, Bisaga, Nunes, & Hasin, 2008; Amrhein, Miller, Yahne, Palmer, & Fulcher, 2003). According to cognitive dissonance theory (Festinger, 1957), failure to comply with public commitments produces psychological discomfort because people are motivated to perceive themselves as consistent. Commitment language has most recently been studied in the field of Motivational Interviewing (MI; Miller & Rollnick, 2002), but numerous studies have found that verbal commitments predict homework completion in a range of counseling contexts (e.g., Kazantzis, Deane, & Ronan, 2000; Levy, 1977). Therefore, even if a counselor does not conduct MI, eliciting commitment language may still increase client motivation. Neither commitment language as defined in MI nor verbally expressed commitments as measured in other treatment process research have been studied in gang-involved populations.

This study examined the effects of commitment language in a pilot trial of BEP with juvenile gang offenders. Commitment language was hypothesized to predict subsequent homework completion and weekly employment.

Method

Participants

The sample ($N = 6$) was derived from a pilot trial of BEP, a home-based vocational counseling intervention for juvenile gang offenders that uses operant methods to build job skills, facilitate employment, and decrease delinquency (McDaniel, 2010). Participants were referred by the Los Angeles County Department of Probation and met the following inclusion criteria: (a) 16 to 20 years of age, (b) at least one arrest within the past year, (c) self-nominated street gang affiliation, (d) residence in Los Angeles County, (e) English fluent, and (f) interested in acquiring employment. All participants had the same probation officer. The probation officer referred all probationers he supervised who expressed interest in employment to the investigators. When a BEP counselor was available to see a new program participant, the referred probationer who had been waiting the longest time within the past month was randomized to either BEP or usual services.

We included data from only 6 of the 15 youth assigned to the BEP condition because audio recording was not carried out systematically until the second half of the pilot trial, as the original study hypotheses did not address in-session client language. In addition, technical difficulties (e.g., accidental deletion of sessions, drained recorder battery, lack of adequate recording space on discs, recorder malfunction) limited the number of recorded sessions available for analysis. Moreover, some types of sessions were never recorded. These sessions tended to include a third party (e.g., a probation officer, a college admissions counselor, a prospective employer) or occurred in noisy, mobile, or public settings (e.g., a mall during job application drop-offs, traffic court lobbies, an employment resource center).

Design

All six youth received home-based counseling services provided by graduate students in clinical psychology, marriage and family therapy, or social work. BEP counseling lasted approximately 1 year, beginning with two sessions a week and gradually decreasing to monthly sessions, depending on the youth's progress. Specific interventions typically included direct instruction focused on employment skills, behavioral rehearsal, and positive reinforcement. Barriers to employment (e.g., family difficulties, drug use) were addressed primarily through behavioral or problem-solving approaches, while low motivation for employment was addressed with motivational enhancement techniques such as joining, value clarification, and decisional balance exercises. Homework assignments were given each week to enhance participants' job searches, help them build and practice employment-related skills, and generalize new behaviors to relevant contexts in their everyday lives. When participants did not complete homework, the therapists either worked with clients to complete the assignments during counseling sessions, supported the clients in identifying and problem solving around barriers, or used MI techniques to elicit the clients' own reasons for seeking employment.

Measures

Commitment language. In line with Amrhein and colleagues' (2003) work, commitment language *strength* (CLS), rather than commitment language frequency, was hypothesized to predict subsequent homework completion and weekly employment. CLS was assessed using a coding manual developed to measure client language during MI sessions (Amrhein, 2009; Amrhein et al., 2003). However, we adapted the manual to focus specifically on commitment language related to homework activities directed toward two program goals: (a) finding and keeping a job and (b) minimizing risk of rearrest. Two undergraduate research assistants divided client speech from session transcripts into thought units (Gottman, 1979), assigning each unit to the commitment language category or any other client language category (Amrhein, 2009). Research assistants then rated the strength of each commitment statement on a Likert scale ranging from -5 to +5. Statements against change received negative ratings, neutral or ambivalent change statements received a zero, and pro-change statements received positive ratings. Amrhein's (2009) coding manual provides a nonexhaustive list of commitment verbs ranging in valence from low strength (e.g., "suppose") to high strength (e.g., "promise"). Frequently, participants used gang speech such as "postin" (i.e., spending time with fellow gang members) and Spanish words such as "haré" (I will) or "quizás vaya" (might go), which were not included in Amrhein's manual. Coders interpreted this type of language by using contextual cues or seeking supervision from the first author to determine the strength of commitment language (Amrhein, 2009). Examples of commitment statements with strength ratings are included in Table 1. In previous research, CLS appeared to be valid, significantly correlating with other ratings of commitment and with positive behavioral outcomes in the treatment of substance abuse in adults and adolescents (Aharonovich et al., 2008; Amrhein et al., 2003).

Table 1. Examples of Commitment Language Statements With Strength Ratings.

Statement	Strength
That's what I'm gonna do. That's gonna be my goal for this whole week.	+5
There's a 75% chance I'll go apply to Autozone.	+3
Um, probably like two applications or something by Thursday.	+2
I have something, but I didn't really work on it.	+1
I don't know. I can't promise about the other thing.	0
I just haven't asked anyone to be a reference yet.	-1
Do the application next week? Most likely no.	-3
It's bullshit...I'm not looking at all the jobs, you know.	-5

Kappa was calculated to determine categorical reliability, and an ICC was calculated to determine continuous reliability. Reliability was based on 20% of the session transcripts, which were coded by both research assistants. The kappa for distinguishing commitment language from other client language categories was moderate ($\kappa = .57$; Altman, 1991), and the ICC for commitment language strength ratings was excellent (.81; Cicchetti, 1994). Mean CLS for each individual counseling session was calculated by summing the strength ratings from each commitment statement and dividing the sum by the frequency of commitment statements.

Homework completion. Homework completion was derived from two sources. First, immediately after each session, counselors privately rated each previous week's homework assignment as incomplete (0), partially complete (1), or complete (2). Second, during each counseling session, youth rated their completion of each previous homework assignment on a 5-point scale analogous to academic grades (i.e., A = 4, B = 3, C = 2, D = 1, F = 0). The youth's 5-point scale was rescaled to a 3-point scale (A = 2, B, C, or D = 1, and F = 0) to allow for comparison with counselor ratings. If either the counselor's or youth's rating was missing, the one available rating was used. If the counselor and the youth disagreed, the counselor's rating was selected to privilege the observer's rating over self-rating, approximating an evaluation made by an employer. Counselors and youth agreed 78.26% of the time, for an average $\kappa = .70$. Examples of homework assignments and levels of completion are presented in Table 2.

Employment. Employment was measured during each counseling session through youth responses to the question: "How many hours did you work this week?" Weekly hours employed was eventually dichotomized (0 = zero hours, 1 = more than zero hours) because using the continuous measure of employment violated the normality assumption.

Data Analysis

Very small samples have been used in previous research to investigate novel treatments with understudied populations (e.g., Shearin & Linehan, 1992; Vujanovic, Bernstein,

Table 2. Examples of Homework Assignments, Extent of Completion, and Associated Ratings.

Homework assignment	Client action	Completion rating
Apply for replacement social security card.	Submitted application for replacement card.	Complete
Find professional clothing for interviews.	Obtained slacks, button-up shirt, and dark, closed-toe shoes.	Complete
Find contact information for two references for résumé.	Only found information for one reference.	Partially complete
Fill out five job applications.	Only filled out two applications.	Partially complete
Speak with uncle about getting hired by his employer.	Did not speak with uncle.	Incomplete
Fill out five job applications.	Did not fill out any applications.	Incomplete

Berenz, & Zvolensky, 2012), typically through a combination of statistical analysis and visual inspection of graphed trends (e.g., Quesnel, Savard, Simard, Ivers, & Morin, 2003). This study uses multilevel modeling and visual inspection to quantify and characterize the relationship between CLS, homework completion, and employment on a week-to-week basis. Multilevel modeling has been recommended for clinical researchers, as it can be used to estimate relationships between counseling process variables that unfold over the course of treatment within individual clients (Kahn, 2011; Reise & Duan, 1999). This method is particularly appropriate for a small sample because it allows for sufficient statistical power to quantify the covariation of repeated measures within very few participants (Kahn, 2011).

Several multilevel models were fit to the data using the MIXED and GLIMMIX procedures in SAS, with weekly CLS entered as a time-varying covariate with weekly homework and weekly employment measures. Multilevel models estimate an average intercept and slope across individuals for the dependent variable over time and quantify the relationship between time-varying covariates and the intercept and slope of the dependent variable (Singer, 1998). Once the best-fitting model was identified based on the comparison of -2 Log Likelihood, Akaike's Information Criterion, and the Second-Order Information Criterion values, each parameter estimate was examined for significance (Anderson, Burnham, & Thompson, 2000). In all models, CLS was grand mean centered to facilitate interpretation of intercept and slope estimates. Missing data analyses were then conducted with an imputed dataset created through the estimation-maximization method (McLachlan & Krishnan, 2008). Models using the imputed dataset were compared with models based on complete observations. Session number was used to indicate time in all models.

Linear multilevel modeling assumes a normal distribution of residuals. Therefore, histograms and scatterplots of the error terms were visually inspected for departures from normality using guidelines described by Hox (2002). When the normality assumption was violated, the dependent variable was dichotomized and binary multilevel

Table 3. Means and Standard Deviations for Primary Variables.

Participant	Number of observations in homework models	Number of observations in employment models	Weekly hours employed	Percentage of weeks worked	Commitment language strength	Homework completion
1	4	5	0.00 (0.00)	0.00%	0.46 (0.18)	1.00 (0.82)
2	9	14	25.75 (14.88)	84.40%	0.16 (0.19)	0.59 (0.80)
3	32	35	7.21 (11.61)	33.33%	0.24 (0.29)	0.71 (0.71)
4	15	21	5.82 (9.21)	50.00%	0.62 (0.80)	1.32 (0.65)
5	20	23	0.00 (0.00)	0.00%	0.57 (0.47)	0.95 (0.72)
6	6	7	0.50 (0.93)	25.00%	0.12 (0.12)	0.71 (0.49)
<i>M (SD)</i>	14.33 (10.48)	17.50 (11.20)	9.03 (9.92)	39.90% (32.15%)	0.38 (0.22)	0.87 (0.27)

models were fit, which provide odds ratios to quantify relationships between predictors and dependent variables. Binary multilevel modeling does not make the same assumptions that linear multilevel modeling does (Guo & Zhao, 2000). After completing the multilevel modeling, individual regression equations for each participant were calculated and graphed to facilitate interpretation of the results. In addition, to understand how verbal and behavioral variables unfolded for individual participants, clinical documentation and sessions transcripts were reviewed for illustrative examples.

According to Scherbaum and Ferreter's (2009) analysis of necessary sample sizes to detect actual effects, there should be statistical power of $>.75$ to detect a large effect in the homework multilevel models, and statistical power of $>.85$ to detect a large effect in the employment multilevel models.

Results

Five participants were male and one was female. Two were 17 years old and four were 18 years old. Four participants were Mexican American, one was Salvadoran American, and one was African American. Participants reported an average of 12 delinquent acts in the 30 days before enrolling in BEP, and one participant reported a history of poly-substance abuse. The average number of sessions attended by the six participants was 26.5, ranging from a minimum of 9 to a maximum of 53. Audio recordings of 165 counseling sessions were transcribed and coded for commitment language. Due to missing homework and employment data, there were 86 complete observations for the homework hypothesis and 105 complete observations for the employment hypothesis. The number of complete sessions for each participant varied substantially. Means and standard deviations for CLS, homework completion, weekly hours employed, and percentage of weeks employed are provided in Table 3. While the mean CLS rating per session was .38, many individual statements within a session fell outside the -1 to $+1$ range. Figure 1 displays each commitment statement strength rating over the course of a single session for Participant C (an 18-year-old, Mexican American male). We randomly selected one session from the overall dataset to illustrate how commitment language could vary throughout a session. The average homework rating was slightly less than "partially complete" on the 3-point scale. The average number of weekly hours

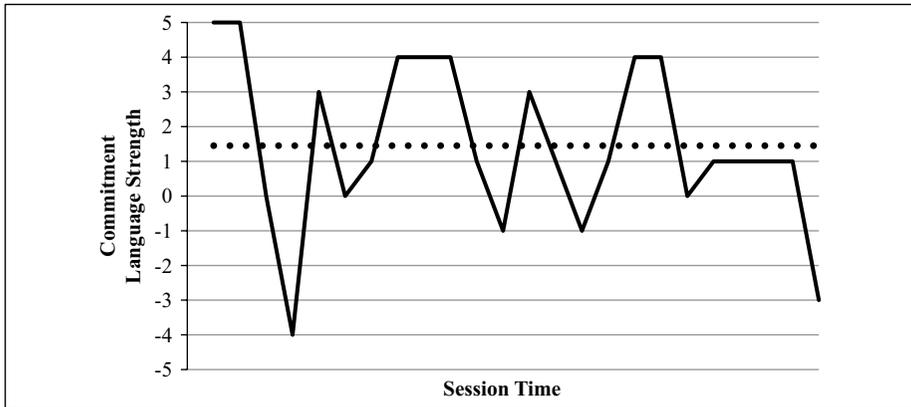


Figure 1. Fluctuations in commitment language strength in a randomly selected session. Note. Individual commitment language strength ratings (bold line) and the mean commitment language strength rating used as the independent variable in these analyses (dotted line) were graphed over the course of one randomly selected session. These data belong to Participant C, an 18-year-old, Mexican American male.

employed was about 9. Youth reported working some number of hours about 40% of the time they were enrolled in BEP. The intervention was designed to last for 1 year, however, only three participants completed the full 12 months. One participant dropped out after 8 months, another after 6 months, and another after 4 months. During the weeks they attended counseling, about 30% of the CLS data, 25% of the homework data, and 2% of the employment data were missing, resulting in about 46% missing data for the homework models and 33% missing data for the employment models.

Homework Completion and Commitment Language

The best-fitting homework model using the complete cases was an autoregressive growth model with CLS as a predictor. The intercept of homework completion was estimated at $B_o = 1.09$ ($p < .01$), the slope did not differ significantly from zero across participants ($B_1 = -0.01$, $p > .05$), and the relationship between CLS in a given week and homework completion the following week was significantly positive ($B_{CLS} = .34$, $p < .05$). The models fit to the imputed dataset showed the same pattern ($B_o = .95$, $p < .01$; $B_1 = -.01$, $p > .05$; $B_{CLS} = .34$, $p < .05$), and histograms and scatterplots of residuals did not indicate a violation of the normality assumption. Individual regression equations predicting homework completion from CLS were plotted for each of the six participants to graphically depict the relationship between CLS in a counseling session and homework completion the following week (Figure 2). The slopes were all positive, but the steepness varied noticeably across participants.

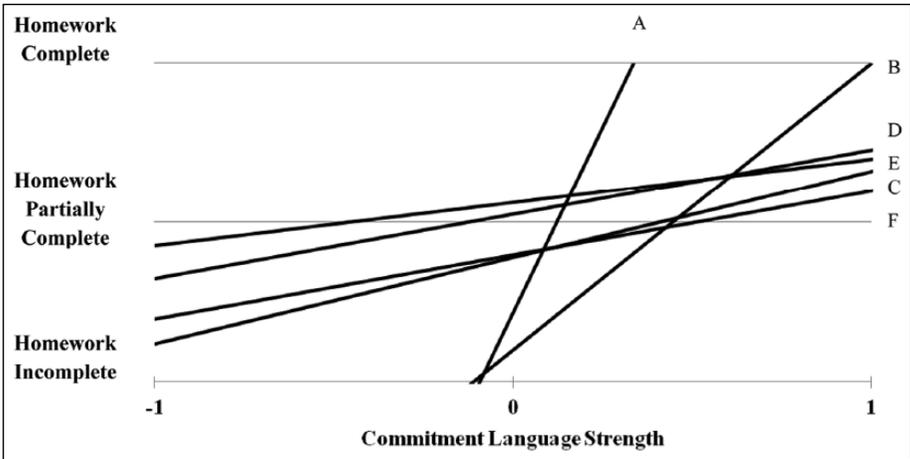


Figure 2. Commitment language strength and homework completion for each participant. Note. Individual regression equations predicting homework completion from mean commitment language strength were calculated and graphed for each of the six participants (each labeled at right). The x-axis represents the average commitment language strength ratings. The y-axis represents the 3-point Likert-type scale for homework completion, from less complete to more complete.

Employment and Commitment Language

The multilevel models predicting weekly hours employed violated the normality assumptions. Therefore, binary multilevel models were fit using a dichotomous measure of weekly employment. The best-fitting model was the autoregressive linear growth model with CLS as a predictor; however, the odds ratios associated with session number, $OR = .98$, 95% CI [0.94, 1.03], and CLS, $OR = .94$, 95% CI [0.33, 2.64], were not significant. In the models fit to the imputed data, the relationships between CLS and session number, $OR = .98$, 95% CI [0.94, 1.00], and between CLS and employment, $OR = .64$, 95% CI [0.26, 1.63], remained nonsignificant.

To examine whether data from two participants who never obtained employment contributed to the non-significant results, the models were re-run excluding these participants ($N = 83$). The linear multilevel models (for the actual and imputed datasets) fit to this smaller dataset continued to violate assumptions of normality and the results from the best-fitting binary multilevel model remained non-significant for session number, $OR = .98$, 95% CI [0.94, 1.03], and CLS, $OR = .97$, 95% CI [0.34, 2.74]. Individual regression equations predicting hours employed from CLS were plotted for the four participants who worked more than zero hours, to graphically depict the relationship between CLS in a BEP session and employment the following week (Figure 3). This graph contained slopes that varied tremendously. CLS was associated with working more hours per week for three youth, and with fewer hours for one.

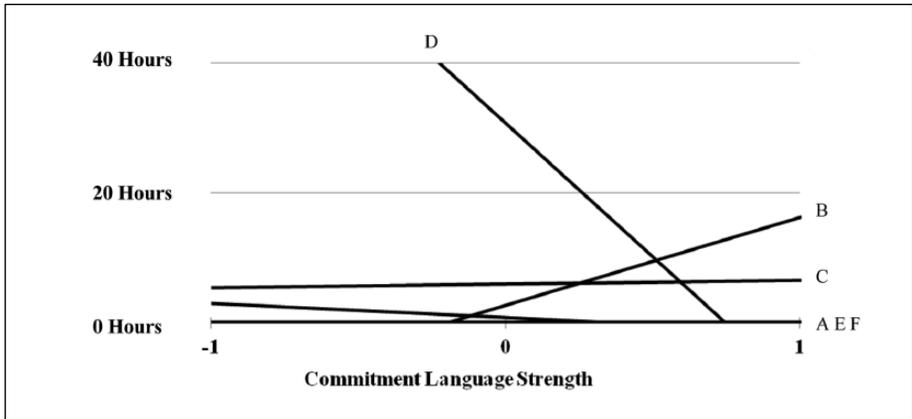


Figure 3. Commitment language strength and weekly hours employed for each participant. Note. Individual regression equations predicting hours employed per week from commitment language strength were calculated and graphed (participants labeled at right; neither participant A nor E worked during the intervention). The x-axis represents the commitment language strength ratings. The y-axis represents the number of hours employed in the following week.

Qualitative Examples of Commitment Language, Homework, and Employment

Clinical documentation and session transcripts were reviewed to identify illustrative examples of how individual participants' commitment language related to homework completion and employment throughout treatment. In Figures 2 and 3, it is evident that CLS strongly predicted homework completion and employment for Participant B (an 18-year-old, Mexican American male), in line with the hypotheses in the present study. His employment status was fairly unique among study participants because he worked at his father's company and had the option to work or not as he pleased. He frequently quit his job, was rehired, and quit again. For Participant B, his weekly employment was quite responsive to his own expressed level of motivation. For Participant A (a 17-year-old, African American male), on the other hand, CLS strongly predicted homework completion but not employment. In his case, it appears that he honestly communicated low motivation throughout treatment and behaved consistently by not completing homework most weeks. He never obtained employment, however, so a relationship between his low expressed motivation and hours worked was not observed in Figure 3. For Participant D (an 18-year-old, Mexican American female), CLS predicted homework completion but negatively predicted employment. Participant D obtained work quickly and maintained it steadily but described some apprehension and then disappointment with her return to a previous employer. She continued working even as she expressed low motivation, in opposition to the correspondence between CLS and employment hypothesized in this study. Multilevel modeling indicated a significant relationship between CLS and homework completion, but not employment, on average across participants and sessions; however, looking more closely at individuals

complicates this picture. Homework completion and CLS tended to correspond for all participants, but the context of employment may have affected how strongly in-session language related to weekly employment on an individual basis.

Discussion

In this study, stronger commitment language during counseling was hypothesized to predict greater homework completion and weekly employment. The first hypothesis was supported, whereas the second was not. This study suggests that motivation to change may contribute to treatment engagement but not job acquisition or maintenance. Engagement in therapy-related homework is considered an essential treatment process variable. The use of homework to facilitate behavioral change is a common strategy in psychotherapies (Kazantzis & Ronan, 2006) and is predictive of positive treatment outcomes (Kazantzis et al., 2000; Kazantzis, Whittington, & Dattilio, 2010; Mausbach, Moore, Roesch, Cardenas, & Patterson, 2010). Homework is considered important for several reasons. First, after behaviors are mastered in session, they can be practiced outside of sessions for greater efficiency (Shelton & Ackerman, 1974). Second, homework may promote generalization from a controlled learning environment to ecologically valid contexts as clients perform prescribed activities outside of the protected realm of therapy (L'Abate, 1997). Third, homework assignments may also provide therapists with a tool for evaluating treatment engagement in their clients (Swenson, Henggeler, Taylor, & Addison, 2009) so that treatment can be tailored to fit a client's readiness to change.

Motivation to Change

The results of this study are relevant to our general understanding of readiness to change in offender populations. First, interventionists often look for "expressed motivation to change" before enrolling offenders in rehabilitation programs (McMurran et al., 1998, p. 43). Some have questioned the validity of commitment language for these clients, however, as situational contingencies may pressure such statements (McMurran et al., 1998). The significant relationship between CLS and homework completion found in this study suggests that counselors should give some weight to offenders' expressions of motivation to change. If clinicians listen carefully for commitment language, they can take their clients' motivational "pulse" in a way. By attending to the strength of commitment language in-session, clinicians may be able to predict whether treatment recommendations will be followed and respond appropriately if they identify low motivation to change. Second, the existing body of research suggests that commitment language may be a mechanism of change in the development of motivation—that it may represent a pathway to increasing readiness to change (Amrhein et al., 2003; Burke, Arkowitz, & Menchola, 2003). While this study does not test whether commitment language causes better homework compliance or whether it represents a change mechanism, these results replicate the association between commitment statements and engagement in treatment activities found in prior research and identifies this association in a new population—juvenile gang offenders.

Null Findings

There are several explanations for the absence of employment effects in this study. First, although commitment language has been hypothesized to predict proximal and distal outcomes (Miller & Rollnick, 2002), research on goal setting suggests that proximal goals are most amenable to client's intentions to change (Seijts & Latham, 2001). Weekly employment outcomes may have been more distal to counseling processes than homework completion because societal forces can outweigh the effect of individual characteristics on job acquisition (e.g., Chakravorty, 2005). Barriers such as employer discrimination against ethnic minorities (Espino & Franz, 2002; Pager, Western, & Sugie, 2009), little access to networks of employed people (Lin & Erickson, 2008), difficulties with transportation (Blumenberg & Manville, 2004), criminal records (Graffam, Shinkfield, Lavelle, & McPherson, 2004; Wheelock, 2005), and lack of education (Ladson-Billings, 2006; Lee, 2002) may have blocked participants from finding jobs, regardless of their motivation to change or engagement in BEP. Identity conflicts (i.e., responsible employee versus tough gang member) may have posed another barrier to performing behaviors outside counseling after committing to them in-session (Vigil, 1988). Situational factors embedded in the counseling context may have privileged the individual over the group (Doherty, 1995) so that during counseling, youth made pro-change commitment statements, but while in the context of the neighborhood, youth acted in terms of their social identity (Tajfel, 1974), triggering gang-related behaviors that were not compatible with job acquisition. Finally, one youth was *less* likely to be employed in the weeks following *stronger* commitment language, which may have masked the positive relationship seen for the other participants who worked at least once. This youth may have differed from the other youth in important, unmeasured ways that led to a negative association. For example, he may have perceived more pressure from his probation officer or parent to co-operate with his counselor during sessions, or may have faced greater barriers to employment acquisition than other youth in the program.

Limitations

One limitation of this study is its correlational design. While researchers propose that commitment language and other forms of client motivational language may actually cause behavior change (Miller & Rollnick, 2002; Miller & Rose, 2009), the results here only show that a relationship exists between commitment statements and subsequent homework completion. However, the strength of this study is its longitudinal nature, and even though these multilevel models did not explore causal relationships, they did predict future performance from past speech. Another limitation is the small sample size ($N = 6$), which reduces the generalizability of these findings. Yet, a countervailing strength is that each participant contributed numerous observations to the study, allowing for multilevel modeling, which provides sufficient statistical power to investigate complex processes in small groups of individuals (e.g., Elliott, Shewchuk, & Richards, 2001). In addition, it was possible to visually inspect the relationships

between each participant's in-session language and out-of-session behaviors (i.e., homework) and to find illustrative qualitative examples in clinical documents and session transcripts to better understand client experiences with homework and employment during treatment. This allowed for a rich depiction of how counseling processes vary between individuals, which could explain some of the inconsistencies in previous literature. Specifically, when a client showed little variation in hours employed, it was possible to understand how his or her in-session language and homework completion may have related to employment experiences when statistical methods could not capture that information. The third limitation is that probationers who were not assigned to the probation officer involved in this study or who were not interested in employment did not participate in the study, and thus may have differed from study participants in unknown ways.

The most significant limitation is the large amount of missing data. Because of machine failure, human error, evolving study aims, and recording constraints, many sessions were not recorded, resulting in missing CLS assessments. Missing audio recordings do not appear to have biased the results in any way related to the actual processes unfolding in therapy. These errors are problematic for statistical power but mainly derive from the fact that the hypotheses tested in this study were secondary, and so less care was taken to limit technical problems earlier during research activities. The missing audio recordings due to recording constraints or audibility problems does limit the interpretation of the link between CLS and later homework completion to sessions that are more traditional (i.e., those that take place in private, quiet setting and are more verbal than action-based). This limitation can also be understood as a strength, however, because it reduces the heterogeneity of the contexts where we observed this correlation. Therefore, the predictive relationship between CLS and homework completion can be understood as a counselor-client dynamic taking place in a traditional therapy context.

In addition, homework assessment procedures evolved over the course of this pilot study, so that homework evaluations were not regularly made until the end of the trial. Furthermore, some participants were not observed for a full year, as planned; three of the six youth dropped out of BEP before planned termination. These limitations may have biased the results such that weeks when youth did not work or did not complete their homework assignments may not have been included in the multilevel models. Thus, a more cautious interpretation of these results would be that CLS is related to homework completion only while participants continue to attend treatment.

Future Research

Future research should examine techniques for increasing CLS in offender therapy. Some promising strategies for clinicians include asking direct questions about commitment to change, asking youth to imagine the future, and facilitating exercises that explore personal values (Naar-King & Suarez, 2011). Client language should continue to be measured in motivational enhancement intervention studies, as it may be an important mechanism of change. If counselors can leverage commitment language, they

may be able to increase participants' motivation to change and improve outcomes, even among juvenile gang offenders who are ambivalent about the futures they desire.

Declaration of Conflicting Interests

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